A YANG model to manage the optical optical parameters for in a WDM network

draft-galimbe-ccamp-iv-yang-00

Ruediger Kunze

Gabriele Galimberti

Gert Grammel

Dharini Hiremagalur

Deutsche Telekom

Cisco Systems

Juniper Networks

Juniper Networks



Motivation

- At the current state of the art the optical circuits in a DWDM network are calculated and checked by Distributed Control planes (GMLS) or centralized Control Planes (SDN) applying proprietary optical algorithms.
- SDN controllers are now requested by most of Operators supporting strong requirements like:
 - Multilayer capabilities
 - Multivendor capabilities
- In case of multivendor capability a controller needs to know what are the underlying network parameters and how to check the optical feasibility.
- A common agreed optical parameter Yang Model set is then needed



Document Scope

- This memo defines a Yang model that translate the information model to support Impairment-Aware (IA) Routing and Wavelength Assignment (RWA) functionality.
- The information model is defined in draft-ietf-ccamp-wson-iv-info and draft-martinelli-ccamp-wson-iv-encode.
- This document defines proper encoding and extend to the models defined in draft-lee-ccamp-wson-yang to support Impairment-Aware (IA) Routing and Wavelength Assignment (RWA) functions
- The Yang model defined in this memo can be used for Optical Parameters monitoring and/or configuration of the multivendor Endpoints and ROADMs



Main models summary

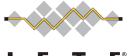
```
augment /if:interfaces/if:interface:
    +--rw optical-transport
       +--rw attenuator-value? attenuator-t
                         decimal64
       +--rw offset?
       +--rw channel-power-ref? decimal64
       +--rw tilt-calibration? tilt-t
    +--rw channel-t.
       +--rw grid?
                               uint32
       +--rw channel-spacing?
                               uint32
       +--rw identifier?
                               uint32
       +--rw n?
                                int32
    +--rw channel-n-m
       +--rw grid?
                               uint32
       +--rw channel-spacing?
                               uint32
       +--rw n?
                                int32
       +--rw m?
                               Uint32
```

But this is a partial tree associated to the interface.



Need to identify where the other optical models will be tied.

```
grouping noise {
      leaf noise {
        type decimal64 {
          fraction-digits 2;
        units "dB";
        description "Noise feasibility - reference ITU-T G.680
         OSNR added to the signal by the OMS. The noise in intended
         per channel and is independent of the number of active
         channels in OMS";
      description "Noise feasibility";
grouping noise-sigma {
      leaf noise-sigma {
        type decimal64 {
          fraction-digits 2;
        units "dB";
        description "Noise Sigma feasibility - accuracy of the
            OSNR added to
           the signal by the OMS";
      description "Noise Sigma feasibility";
```



Work in progress

- Identify the right schema / tree for the optical parameters.
- Sanitize and agree the most general optical parameters
- Identify how to handle / model proprietary parameters
- Get the feedbacks / consensus / collaboration from ccampers
- Collaborate to complement / merge / extend existing drafts

